1. (Amended) A method for guiding the selection of a therapeutic treatment regimen for a patient with a disease or medical condition, said method comprising:

(A) providing information about the methylation status at selected sites of the DNA of the patient to a computing device comprising:

a first knowledge base comprising information about a plurality of different methylation statuses at selected sites of the DNA in cells with a known disease or medical condition and/or healthy cells,

a second knowledge base comprising a plurality of expert rules for evaluating and selecting a type of disease or medical condition based on the methylation status at selected sites of the DNA of a patient,

a third knowledge base comprising a plurality of different therapeutic regimens for diseased cells or medical conditions,

a fourth knowledge base comprising a plurality of expert rules for evaluating and selecting therapeutic treatment regimens for diseased cells or medical conditions,

(B) generating in said computing device a listing or ranked listing of diseases or medical conditions based on the information about the methylation status at selected sites of the DNA of the patient, the first knowledge base and the second knowledge base, and

(C) generating in said computing device a ranked listing of available therapeutic treatment regimens for said patient based on the information generated in step (B) and the third knowledge base and fourth knowledge base.

3. (Amended) A method according to claim 1, characterized in that the therapeutic regimen is a preventive therapeutic treatment regimen.

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4. (Amended) A method according to claim 1, further comprising:

a fifth knowledge base comprising advisory information useful for the treatment of a patient with different constituents of said different therapeutic treatment regimens; and

(D) generating in said computing device advisory information for one or more treatment regimens in said ranked listing based on the information generated in step (C) according to claim 1 and the fifth knowledge base.

5. (Amended) A method according to claim 1, further comprising the steps of:

(E) entering a user-defined therapeutic treatment regimen for said disease or medical condition that is not included in said third knowledge base; and

(F) generating in said computing device advisory information for one or more user-defined combination therapeutic treatment regimen.

14. (Amended) A method for treatment of a patient with a disease or medical condition, said method comprising:

(A) isolating a DNA-containing sample from said patient;

(B) analyzing cytosine methylation patterns at selected sites of the DNA contained in said sample;

(C) providing data about the methylation status at selected sites of the DNA of the patient thereby creating a first knowledge base comprising said data, a second knowledge base comprising information about a plurality of different methylation statuses at selected sites of the DNA in cells with a known disease or medical condition and/or healthy cells, a third knowledge base comprising a plurality of expert rules for evaluating and selecting a type of disease or medical condition based on the methylation status at selected sites of the DNA of a patient, a fourth

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knowledge base comprising a plurality of different therapeutic regimens for diseased cells or medical conditions, a fifth knowledge base comprising a plurality of expert rules for evaluating and selecting therapeutic treatment regimens for diseased cells or medical conditions, a sixth knowledge base comprising advisory information useful for the treatment of a patient with different constituents of said different therapeutic treatment regimens;

(D) generating a ranked listing of diseases or medical conditions based on the data of the first knowledge base, the second knowledge base and the third knowledge base;

(E) generating a ranked listing of available therapeutic treatment regimens for said patient based on the information generated in step (D) and the fourth knowledge base and the fifth knowledge base;

(F) generating advisory information for one or more specific treatment regimens in said ranked listing based on the information generated in step (E) and the sixth knowledge base; and

(G) providing said one or more specific treatment regimens to said patient with a disease or medical condition based on the advisory information generated in step (F).

17. (Amended) A method according to claim 14, characterized in that the therapeutic treatment regimen is a preventive treatment regimen.

19. (Amended) A method according to claim 14, further comprising the steps of:

(H) entering a user-defined therapeutic treatment regimen for said disease or medical condition that is not included in said fourth knowledge base; and

(I) generating advisory information for one or more user-defined combination therapeutic treatment regimen.

23. (Amended) A method according to claim 14, said advisory information including:

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warnings to take the patient off a contraindicated drug before initiating a corresponding therapeutic treatment regimen; and information clinically useful to implement a corresponding therapeutic treatment regimen.

24. (Amended) A method according to claim 14, comprising a seventh knowledge base comprising patient therapeutic treatment regimen history, said advisory information including previous therapeutic treatment regimen information extracted from said seventh knowledge base.

28. (Amended) A system for guiding the selection of a therapeutic treatment regimen for a patient with a disease or medical condition, said system comprising:

(A) a computing device comprising:

a first knowledge base comprising information about a plurality of different methylation statuses at selected sites of the DNA in cells with a known disease or medical condition and/or healthy cells,

a second knowledge base comprising a plurality of expert rules for evaluating and selecting a type of disease or medical condition based on the methylation status at selected sites of the DNA of a patient,

a third knowledge base comprising a plurality of different therapeutic regimens and/or preventive therapeutic treatment regimens for diseased cells or medical conditions,

a fourth knowledge base comprising a plurality of expert rules for evaluating and selecting therapeutic treatment regimens for diseased cells or medical conditions;

(B) means for providing information about the methylation status at selected sites of the DNA of the patient to computing device;

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(C) means for generating in said computing device a ranked listing of diseases or medical conditions based on the information about the methylation status at selected sites of the DNA of the patient, the first knowledge base and the second knowledge base; and

(D) means for generating in said computing device a listing or ranked listing of available therapeutic treatment regimens for said patient based on the information generated according to step (C), the third knowledge base and the fourth knowledge base.

31. (Amended) A system according to claim 28, further comprising:

(F) means for entering a user-defined therapeutic treatment regimen for said disease or medical condition that is not included in said third knowledge base; and

(G) means for generating in said computing device advisory information for one or more user-defined combination therapeutic treatment regimen.

40. (Amended) A computer program product for guiding the selection of a therapeutic treatment regimen for a patient with a disease or medical condition, said computer program product comprising

a computer usable storage medium having computer readable program code means embodied in the medium, the computer readable program code means comprising:

(A) computer readable program code means for generating:

a first knowledge base comprising information about a plurality of different methylation statuses at selected sites of the DNA in cells with a known disease or medical condition and/or healthy cells,

a second knowledge base comprising a plurality of expert rules for evaluating and selecting a type of disease or medical condition based on the methylation status at selected sites of the DNA of a patient,

a third knowledge base comprising a plurality of different therapeutic regimens and/or preventive therapeutic regimens for diseased cells or medical conditions,

a fourth knowledge base comprising a plurality of expert rules for evaluating and selecting therapeutic treatment regimens for diseased cells or medical conditions,

a fifth knowledge base comprising advisory information useful for the treatment of a patient with different constituents of said different therapeutic treatment regimens;

(B) computer readable program code means for providing information about the methylation status at selected sites of the DNA of the patient;

(C) computer readable program code means for generating a ranked listing of diseases or medical conditions based on the information about the methylation status at selected sites of the DNA of the patient;

(D) computer readable program code means for generating in said computing device a ranked listing of available therapeutic treatment regimens for said patient; and

(E) computer readable program code means for generating in said computing device advisory information for one or more treatment regimens in said ranked listing.

REMARKS

Applicants respectfully request reconsideration of the above-identified patent application in view of the amendment above and the remarks below.